

## **REMARKS**

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

### **I. Amendments to the Claims**

Non-elected claims 47, 49 and 50 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

Further, independent claim 28 has been amended to clarify features of the invention recited therein and to further distinguish the present invention from the references relied upon in the rejections discussed below. Support for these amendments can be found, at least, on page 13, lines 9-18, page 15, lines 13-19, page 22, lines 11-20 and page 23 of the clean version of the substitute specification filed on August 23, 2010.

In addition, claims 39 and 41-46 have been (i) amended to independent form in order to overcome the 35 U.S.C. § 112, second paragraph rejection discussed in detail below, and (ii) amended to remain consistent with amended independent claim 28.

### **II. 35 U.S.C. § 112, Second Paragraph Rejection**

Claims 39 and 41-46 were rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claims 39 and 41-46 were rejected for having inconsistencies between the preamble and the body of the claims.

This rejection is believed clearly inapplicable to claims 39 and 41-46, which have been amended to independent form to specifically overcome the problems identified by the Examiner

and to otherwise comply with the requirements of 35 U.S.C. § 112, second paragraph. As a result, withdrawal of this rejection is respectfully requested.

Furthermore, claim 41 was rejected under 35 U.S.C. § 112, second paragraph for reciting “end covers,” for which there was allegedly no antecedent basis. Claim 41 has been amended to clarify that the manifold head includes end covers. As a result, this rejection is no longer applicable, and withdrawal thereof is respectfully requested.

### **III. 35 U.S.C. § 102 Rejections**

Claims 28, 38, 43 and 44 were rejected under 35 U.S.C. § 102(b) as being anticipated by Holm (U.S. 2,875,986). In addition, claims 28, 38, 43 and 44 were rejected under 35 U.S.C. § 102(b) as being anticipated by Morse (U.S. 4,291,754). These rejections are believed clearly inapplicable to amended independent claims 28, 39 and 41-46 and claims 29 and 31-38 and 48 that depend therefrom for the following reasons.

Amended independent claim 28 recites a manifold system including a monolithic structure with outer structure walls and inner channel walls defining channel openings of a plurality of channels. Claim 28 recites that the manifold system includes a manifold head including a first tunnel and a second entry/exit point distributing the two fluids separately into and out of the channels. In addition, claim 28 recites that the manifold head distributes the first fluid and the second fluid into specific channels of the multi-channel monolithic structure in a checkerboard configuration, such that, when one of the first fluid and the second fluid is distributed into a first channel of the specific channels, another one of the first fluid and the second fluid is distributed into all channels, of the specific channels, which are adjacent to the

first channel of the specific channels. Holm and Morse both fail to disclose or suggest the above-mentioned distinguishing features as recited in amended independent claim 28.

Rather, Holm merely teaches the use of rows of low pressure passages 5 for transporting low pressure fluids and rows of high pressure passages 6 for transporting high pressure fluids, such that (i) each row of low pressure passages 5 includes a series of adjacent low pressure passages arranged in parallel and (ii) each row of high pressure passages 6 includes a series of adjacent low pressure passages arranged in parallel (see Figs. 1-3 and col. 3, lines 21-32).

Thus, in view of the above, it is clear that Holm teaches that each row of low pressure passages 5 includes a series of adjacent low pressure passages arranged in parallel and that each row of high pressure passages 6 includes a series of adjacent low pressure passages arranged in parallel, but fails to disclose or suggest that the manifold head distributes the first fluid and the second fluid into specific channels of the multi-channel monolithic structure in a checkerboard configuration, such that, when one of the first fluid and the second fluid is distributed into a first channel of the specific channels, another one of the first fluid and the second fluid is distributed into all channels, of the specific channels, which are adjacent to the first channel of the specific channels, as recited in claim 28.

Now, turning to the Morse reference, which was also relied upon for rejecting independent claim 28, the Applicants note that Morse merely teaches the use of interleaved air fins 14 and gas fins 16 for directing air and gas in alternating adjacent counter-flow passages (see Figs. 1 and 8, and col. 3, lines 53-61).

Therefore, in view of the above, it is evident that Morse merely teaches the use of interleaved/alternating passages, and fails to disclose or suggest that the manifold head distributes the first fluid and the second fluid into specific channels of the multi-channel

monolithic structure in a checkerboard configuration, such that, when one of the first fluid and the second fluid is distributed into a first channel of the specific channels, another one of the first fluid and the second fluid is distributed into all channels, of the specific channels, which are adjacent to the first channel of the specific channels, as recited in claim 28.

In other words, both Holm and Morse teach that first and second channels are distributed in a “line pattern,” whereas claim 28 requires the manifold head to distribute the first fluid and the second fluid into specific channels of the multi-channel monolithic structure in a checkerboard configuration, such that, when one of the first fluid and the second fluid is distributed into a first channel of the specific channels, another one of the first fluid and the second fluid is distributed into all channels, of the specific channels, which are adjacent to the first channel of the specific channels.

Therefore, because of the above-mentioned distinctions it is believed clear that independent claim 28 and claims 29, 31-38 and 48 that depend therefrom are not anticipated by Holm and are not anticipated by Morse.

Furthermore, there is no disclosure or suggestion in Holm and/or Morse or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Holm and/or Morse to obtain the invention of independent claim 28. Accordingly, it is respectfully submitted that independent claim 28 and claims 29, 31-38 and 48 that depend therefrom are clearly allowable over the prior art of record.

Amended independent claims 39, 41, 42, 43, 44, 45 and 46 are directed to a manifold stack, a row of manifold systems, a block of rows of manifold systems, a reactor, a method, a row of manifold stacks and a row of manifold stacks, respectively and each recites features that correspond to the above-mentioned distinguishing features of independent claim 28. Thus, for

the same reasons discussed above, it is respectfully submitted that claims independent 39 and 41-46 are allowable over the prior art of record.

#### **IV. 35 U.S.C. § 103(a) Rejections**

Claims 29, 31-37, 39, 41, 42, 45 and 46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holm and/or Morse (main references) in view of various combinations of Dahlgren (U.S. 4,589,480), Veltkamp (U.S. 5,725,051) and Albertsen (U.S. 4,149,591) (additional references).

In view of the above, it is respectfully submitted that the additional references do not disclose or suggest the above-discussed features of independent claims 28, 39 and 41-46 which are lacking from the main references. Therefore, no obvious combination of the main references with any of the additional references would result in, or otherwise render obvious, the invention recited independent claims 28, 39 and 41-16 and the claims that depend therefrom.

**V. Conclusion**

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance and an early notification thereof is earnestly requested. The Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

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